Quarterly Groundwater Monitoring and Sampling Report for the Powerine Refinery

January 1988

PREPARED FOR

Powerine Oil Company
P.O. Box 2108
Santa Fe Springs, California 90670

By

ERT, Inc.
19782 MacArthur Boulevard, Suite 365
Irvine, California 92715

ERT®
A RESOURCE ENGINEERING COMPANY

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ERT

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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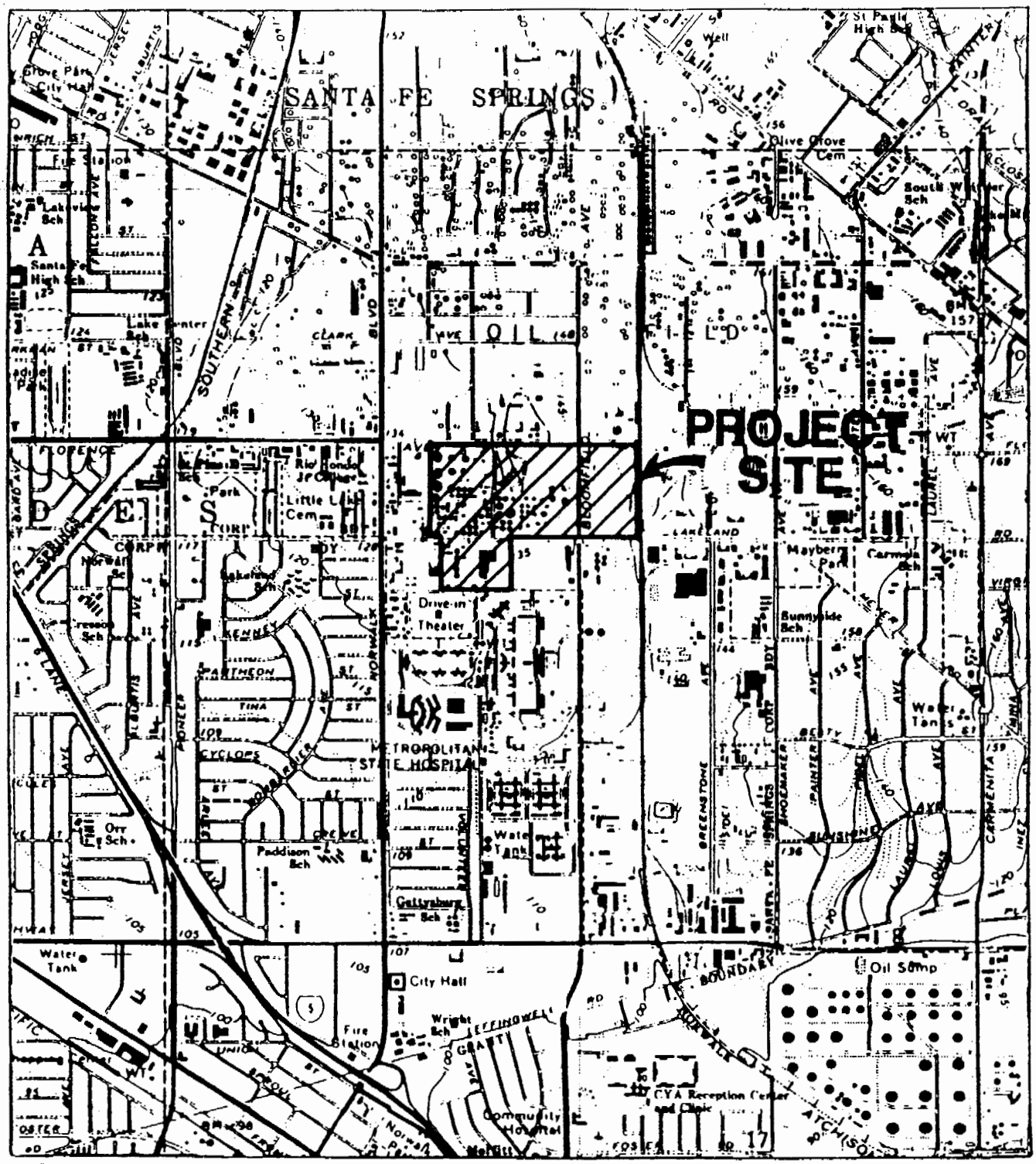

BASE MAP FROM U.S.G.S. 7½ MINUTE SERIES (TOPOGRAPHIC), WHITTIER QUADRANGLE

N

0 2000 4000 FEET

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A RESOURCE ENGINEERING COMPANY

FIGURE 1

PROJECT SITE LOCATION MAP

DRAWN BY:	DATE:	PROJECT NO.:
CHK'D BY:	REVISED:	DWG.NO.:

1.0 INTRODUCTION

ERT, Inc. measured water levels in 13 monitoring wells on November 30 and December 1, 1987 and collected water samples from 11 monitoring wells and one onsite production well between December 2 and 4, 1987 at the Powerine Oil Company refinery located at 12354 Lakeland Road, Santa Fe Springs, California (Figures 1 and 2). The samples were analyzed to evaluate the concentrations of purgeable halocarbon and purgeable organic compounds. This work was performed to comply with the requirements of the Regional Water Quality Control Board, Los Angeles Region (RWQCB) for quarterly monitoring, sampling, and analytical testing of perched groundwater beneath the refinery. This report summarizes the field procedures, laboratory analyses, and analytical results for the fourth quarter of 1987.

POWERINE Oil Company

12354 Lakeland Road, P.O. Box 2108
Santa Fe Springs, California 90670

(213) 944-9861
(213) 944-6111

TLX No: 4720404
A/B Powerne
Telecopy No: 944-8522

January 14, 1987

J. E. Ross
Senior Water Resource Control Engineer
California Regional Water Quality Control Board
Los Angeles Region
107 South Broadway, Suite 4027
Los Angeles, CA 90012-4596

Re: Fourth Quarter 1987 Groundwater Monitor - Powerine Oil Company

Dear Mr. Ross:

Enclosed please find Powerine Oil Company's fourth quarter monitoring report for groundwater at the Santa Fe Springs refinery.

Please note that we have changed consultants and the work is now being performed by ERT in Irvine. When you are communicating with Powerine regarding this project, address all your correspondence to me and I will distribute appropriate information to our consultants.

The data indicated no significant changes in the groundwater status except that the hydrocarbon on the groundwater in well MW-504 has increased significantly. We will be addressing this situation next quarter.

If you have any questions regarding these matters, please call me.

Sincerely,

Don H. Baker III, esq.
Coordinator - Environmental Affairs

DHB:aj
Enc.

cc: A. L. Gualtieri
W. J. Ziemba
Jocelyn Niebur
Dennis Leonard, Dept. of Health Services

FX-9 Wells

FX-9 Wells

FX-9 Wells

FX-9 Wells

TABLE 1

Summary of Monitoring Data

MW* No.	Date	Elevation Top of Casing (feet,MSL)	Depth to Water (feet)	Water Level Elevations (feet,MSL)	Free Product (feet)
101	11/30/87	134.98	88.18	46.8	ND
102	11/30/87	134.81	a	a	a
103	12/01/87	136.95	92.60	44.35	ND
104	12/01/87	141.60	86.78	54.82	ND
201	11/30/87	132.91	89.70	43.21	ND
202	12/01/87	137.89	b	b	ND
203	12/01/87	143.89	95.18	48.71	ND
204	12/01/87	140.14	94.26	45.88	ND
205	12/01/87	138.17	89.48	48.69	ND
206	11/30/87	129.93	92.33	37.6	ND
501	12/01/87	128.70	91.27	37.43	ND
502	11/30/87	131.19	93.72	37.47	ND
503	11/30/87	131.43	92.19	39.24	ND
504	11/30/87	133.83	92.38	41.45	1.90 (0.51)c

KEY

ND = Not Detected
a = Destroyed
b = Dry Well
c = Quantity of free product, previous report
* = Monitoring Well

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4.0 ANALYTICAL RESULTS

All analytical results are presented on the Laboratory Reports in Appendix B. Results of analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX) performed for this and the previous five quarterly reports are summarized on Table 3. Results of analyses for purgeable halocarbons are summarized on Table 4. In water samples extracted from the eleven (11) monitoring wells and one (1) production well, benzene concentrations ranged from non-detectable (less than 5 ug/L) to 13,000 ug/L, toluene concentrations ranged from non-detectable (less than 5 ug/L) to 2,300 ug/L, ethylbenzene concentrations ranged from non-detectable (less than 5 ug/L) to 900 ug/L, and concentrations of total xylenes ranged from non-detectable (less than 5 ug/L) to 5,000 ug/L. Relatively low concentrations of benzene (11 ug/L) and total xylenes (20 ug/L) were detected in sample blank MW-001; however, BTEX concentrations did not exceed the detection limits (5 ug/L) in sample blank MW-002.

Concentrations of volatile organic compounds were highest in water samples collected from monitoring wells MW-206, MW-501, and MW-502. Benzene concentrations in these samples were 7,400 ug/L, 8,300 ug/L, and 13,000 ug/L, respectively. Toluene concentrations of the samples collected in MW-206, MW-501, and MW-502 ranged from 1,200 to 2,300 ug/L; ethylbenzene concentrations ranged from 400 to 900 ug/L; and total xylene concentrations ranged from 1,100 to 5,000 ug/L.

The concentrations of other volatile organic compounds detected in water samples analyzed this quarter were relatively low with the exception of the acetone concentrations detected in samples from monitoring wells MW-205 and MW-502 and production well P-6. Acetone concentrations detected in samples extracted from monitoring wells MW-205, MW-502, and production well P-6 were 240 ug/L,

2.2 Groundwater Sampling

Eleven (11) monitoring wells and one (1) onsite water production well (P-6 on Figure 2) were sampled between December 2 and December 4, 1987. Sampling began with monitoring well MW-205, which contained water with the lowest reported concentrations of hydrocarbon compounds, and proceeded sequentially to wells with progressively higher reported concentrations. This sampling sequence was followed in order to minimize the potential for cross contamination between wells.

Before a sample was extracted, each well was purged of approximately four (4) well volumes of water using either a 1/3-horsepower Grundfos submersible pump, or a Teflon hand bailer. Upon removal of four (4) well volumes, the water's pH, temperature, and conductivity were measured and recorded. Purged water was discharged into 55-gallon drums to be later disposed of by refinery personnel.

Water samples were extracted from the monitoring wells using a Teflon bailer and from a faucet adjacent to the well housing of production well P-6. The samples were placed into two (2) 40-mililiter VOA vials. All samples were properly labeled and immediately placed on ice in a portable cooler. In addition, two (2) sample blanks consisting of distilled water obtained from a State-certified laboratory were collected. These sample blanks were extracted from the same Teflon bailer used to sample the monitoring wells. Monitoring well MW-504 contained free product and, therefore, was not sampled.

All equipment used to purge and sample the monitoring wells was decontaminated after each well was sampled. The

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decontamination procedure consisted of a tap water rinse, a thorough scrubbing in tap water and non-phosphatic detergent, a second tap water rinse, and a final rinse using distilled water.

A summary of the data recorded while sampling the monitoring wells is presented in Table 2. Conductivity values ranged from 1800 umhos/cm in MW-503 to 4800 umhos/cm in MW-104 and, in general, decrease across the site from the northeast to the southwest. The measurements of water pH ranged from 6.8 to 7.2.

TABLE 2

Summary of Groundwater Sampling Data

MW* No.	Time	Purge Method	Volume Purged (gals.)	Temp. (°C)	pH	Conductivity (cm/umhos)	Water Turb.
101	12/3/87 (10:20)	HB	4	a	a	a	a
103	12/3/87 (12:00)	HB	2	a	6.9	3400	cloudy
104	12/2/87 (17:45)	SP	30	a	6.9	4800	cloudy
201	12/3/87 (14:30)	SP	35	a	7.0	2050	cloudy
202	b	b	b	b	b	b	b
203	12/3/87 (16:30)	SP	30	a	7.0	3190	cloudy
204	12/4/87 (08:45)	SP	25	24	7.05	2140	clear to sl. cloudy
205	12/2/87 (10:30)	SP	24	a	7.20	2180	clear to sl. cloudy
206	12/4/87 (11:30)	SP	30	24	6.70	2200	gray cloudy
501	12/4/87 (09:45)	SP	20	24	6.83	2820	sl. cloudy

2.0 GROUNDWATER MONITORING AND SAMPLING

2.1 Water-Level Monitoring

Water-level monitoring was performed on November 30 and December 1, 1987 using a Solinst water level meter in wells containing water only, and a stainless steel tape, water gauging paste, and gasoline gauging paste in a well containing free product (MW-504). Monitoring equipment was decontaminated following each measurement. The decontamination procedure consisted of a tap water rinse, a thorough scrubbing using a non-phosphatic detergent in tap water, a second tap water rinse, and a final rinse using distilled water obtained from a State-certified analytical laboratory.

Groundwater monitoring results are summarized in Table 1 and are illustrated on the groundwater contour map in Figure 3. Groundwater elevations ranged from 37.4 feet above MSL in MW-501 to 54.8 feet above MSL in MW-104. The water table gradient slopes southwesterly across the site.

Monitoring well MW-202 was dry and monitoring well MW-504 contained 1.9 feet of free product on the upper surface of the perched aquifer. Therefore, water samples were not extracted from either of these monitoring wells. The depth to groundwater was not measured in monitoring well MW-102 because the well was reportedly destroyed sometime prior to July, 1987.

TABLE 2 (Cont.d)

Summary of Groundwater Sampling Data

MW* No.	Time	Purge Method	Volume Purged (gals.)	Temp. (°C)	pH	Conductivity (cm/umbos)	Water Turb.
502	12/4/87 (10:30)	SP	30	24	6.85	2450	sl. cloudy
503	12/3/87 (15:40)	SP	35	a	7.0	1800	sl. cloudy
504	c	c	c	c	c	c	c

KEY

a = Not measured
b = Insufficient water in well
c = Not sampled due to presence of free product in well
HB = Hand bailer
SP = Submersible pump
sl. = Slightly
* = Monitoring well

3.0 LABORATORY ANALYSIS

All samples were submitted to Chemical Research Laboratories, Inc., a California-certified analytical laboratory, for analysis using EPA Test Methods 601 and 624. Standard chain-of-custody procedures and documents were utilized (Appendix A). Test methods were performed following EPA monitored quality assurance/quality control procedures assuring results of laboratory analyses.

3.1 EPA Test Method 601

EPA method 601 is a purge and trap gas chromatographic method applicable to the determination of purgeable halocarbons from water samples as prescribed by 40 CFR 136.1. An inert gas is bubbled through a 5-ml water sample contained in a specifically-designed purging chamber and maintained at ambient temperature from the aqueous phase to the water vapor phase. The vapor is swept through a sorbent trap where the halocarbons are trapped. After purging is completed, the trap is heated and backflushed with the inert gas to desorb the halocarbons which are then detected with a halide specific detector. Two field reagent blanks were prepared from reagent water and carried through the sampling and handling protocol to check for possible contamination. Standard operating procedures require that compound identification should be supported by at least one additional qualitative technique, such as EPA method 624.

3.2 EPA Test Method 624

EPA method 624 is a purge and trap gas chromatographic/mass spectrometer (gc/ms) method applicable to the determination of purgeable organics from water samples, and is also prescribed by 40 CRF 136.1. An inert

gas is bubbled through a 5-ml sample contained in a specifically designed purging chamber at ambient temperature. The purgeables are efficiently transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the purgeables are trapped. After purging is completed, the sorbent column is heated and backflushed with the inert gas to desorb the purgeables into a gas chromatographic column. The gas chromatograph is temperature programmed to separate the purgeables which are then detected with a mass spectrometer. Two field reagent blanks were prepared from reagent water and carried through the sampling and handling protocol to check for possible contamination.

TABLE 3

Summary of Analytical Test Results -
Volatile Organic Compounds

(Values in ug/L)

MW No.	Date	Benzene	Ethyl Benzene	Toluene	Total Xylenes
101	Dec. 87	140	ND<5	ND<5	ND<5
	Sept. 87	340	37	ND<30	ND<30
	June. 87	43	1.6	0.5	2.6
	Jan/Feb 87	39	2.5	TR<1	TR<1
	Nov. 86	62	3.3	1.4	1.5
	Jul. 86	58	TR<5	ND<1	ND<1
103	Dec. 87	12	ND<5	ND<5	ND<5
	Sept. 87	120	ND<5	ND<5	ND<5
	June 87	69	1.3	1.1	3.5
	Jan/Feb 87	180	1.0	1.0	3.9
	Nov. 86	78	ND<1	2.2	5.7
	Jul. 86	TR4	ND<1	ND<1	ND<1
104	Dec. 87	ND<5	ND<5	ND<5	ND<5
	Sept. 87	ND<5	ND<5	ND<5	ND<5
	June 87	0.6	ND<0.5	0.5	1.5
	Jan/Feb. 87	ND<1	ND<1	ND<1	ND<1
	Nov. 86	ND<1	ND<1	ND<1	ND<1
	Jul. 86	ND<1	ND<1	ND<1	ND<1

Table 3 (continued)

Summary of Analytical Test Results -
Volatile Organic Compounds

MW No.	Date	Benzene	Ethyl Benzene	Toluene	Total Xylenes
201	Dec. 87	290	ND<5	6	142
	Sept. 87	120	9	12	12
	June 87	290	23	12	39
	Jan/Feb 87	70	5.0	4.0	15
	Nov. 86	68	10	10	32
	July 86	ND<1	ND<1	ND<1	ND<1
203	Dec. 87	120	ND<5	ND<1	ND<1
	Sept. 87	92	ND<5	ND<5	ND<5
	June 87	1.0	1.6	0.7	2.9
	Jan/Feb 87	78	TR<1	1.0	3.4
	Nov. 86	88	TR<1	1.4	1.9
	July 86	50	ND<1	TR6	18
204	Dec. 87	9	ND<5	ND<5	ND<5
	Sept. 87	18	ND<5	ND<5	ND<5
	June 87	45	2.8	0.7	3.4
	Jan/Feb 87	9.2	2.6	TR<1	2.3
	Nov. 86	260	15	6.7	41
	July 86	TR9	ND<1	ND<1	ND<1

Table 3 (continued)

Summary of Analytical Test Results -
Volatile Organic Compounds

MW No.	Date	Benzene	Ethyl Benzene	Toluene	Total Xylenes
205	Dec. 87	ND<5	ND<5	ND<5	ND<5
	Sept. 87	ND<5	ND<5	ND<5	ND<5
	June 87	3.6	0.5	0.6	1.5
	Jan/Feb 87	4.3	TR<1	ND<1	1.2
	Nov. 86	7.5	ND<1	ND<1	1.5
	July 86	13	ND<1	ND<1	ND<1
206	Dec. 87	7400	900	2300	5000
	Sept. 87	4100	1300	930	4000
	June 87	3700	1300	1300	3200
	Jan/Feb 87	4500	1100	1800	3600
	Nov. 86	6800	1800	2700	7100
	July 86	3800	TR82	1800	9000
501	Dec. 87	8300	400	2000	1100
	Sept. 87	1400	170	ND<50	ND<50
	June 87	2200	210	40	78
	Jan/Feb 87	1500	160	TR<50	74
	Nov. 86	1500	210	67	140
	July 86	1400	290	51	470

Table 3 (continued)

Summary of Analytical Test Results -
Volatile Organic Compounds

MW No.	Date	Benzene	Ethyl Benzene	Toluene	Total Xylenes
502	Dec. 87	13000	900	1200	4800
	Sept. 87	8400	1300	1700	5500
	June 87	13000	1400	2100	5600
	Jan/Feb 87	6300	960	1700	5200
	Nov. 86	6200	1500	4100	8500
	July 86	10000	1200	4100	6900
503	Dec. 87	220	ND<10	44	660
	Sept. 87	53	280	76	390
	June 87	620	330	360	510
	Jan/Feb 87	TR<25	440	95	690
	Nov. 86	95	940	290	1600
	July 86	140	ND<1	ND<1	740
PW-6	Dec. 87	ND<5	ND<5	ND<5	ND<5
	Sept. 87	ND<5	ND<5	ND<5	ND<5

Table 3 (continued)

Summary of Analytical Test Results -
Volatile Organic Compounds

MW No.	Date	Benzene	Ethyl Benzene	Toluene	Total Xylenes
001	Dec. 87	11	ND<5	ND<5	20
002	Dec. 87	ND<5	ND<5	ND<5	ND<5

KEY

MW = Monitoring Well

ND = This compound was not detected; the limit of detection for this analysis is the amount stated in the table above.

TR = Trace, this compound was present, but was below the level at which concentration could be determined.

* = Sample Blank

Data from July 1986 to September 1987 from IT Corporation Report (October, 1987)

TABLE 4

Summary of Analytical Test Results -
Purgeable Halocarbon Compounds

Monitoring Well Number	Compounds Detected	Concentration (ug/L)
101	1,1-Dichloroethane	1.2
	Trans-1,2-Dichloroethene	1.5
	Trichloroethene	7.7
103	1,1-Dichloroethane	3.7
104	None Detected	---
201	Trans-1,2-Dichloroethene	3.0
	1,2-Dichloroethane	3.3
203	Methylene Chloride	2.0
	Trans-1,2-Dichloroethene	7.4
204	1,2-Dichloroethane	3.3
205	Trans-1,2-Dichloroethene	1.0
	1,2-Dichloroethane	6.5
	1,1,1-Trichloroethane	1.2
206	1,1-Dichloroethane	1.2
	Trans-1,2-Dichloroethene	1.7
	1,2-Dichloroethane	12.4
501*	None Detected	---
502	1,2-Dichloroethane	17.0
503	Trans-1,2-Dichloroethene	12.0
P-6	None Detected	---
001**	None Detected	---
002**	None Detected	---

* A higher detection limit (50 ug/L) was used due to matrix interference.

** Sample Blank

1,700 ug/L, and 45 ug/L, respectively. A potential source for the acetone detected in these samples has not been evaluated for this investigation.

The concentration of purgeable halocarbons detected in the samples analyzed for the fourth quarter of 1987 was relatively low (Table 4).

5.0 CONCLUSIONS

The monitoring and analytical results derived in the fourth quarter, 1987 are apparently consistent with the results derived during previous quarters (Table 3). A comparison of the most recently derived results with the results of the previous quarter (September, 1987) indicate the following:

- The benzene concentration was nearly the same in MW-104, MW-203, MW-204, MW-205, and PW-6; decreased in MW-101 and MW-103; and increased in W-201, MW-206, MW-501, MW-502, and MW-503.
- The toluene concentration was nearly the same in MW-101, MW-103, MW-104, MW-201, MW-203, MW-204, MW-205, and PW-6; decreased in MW-502 and MW-503; and increased in MW-206 and MW-501.
- The ethylbenzene concentration was nearly the same in MW-103, MW-104, MW-201, MW-203, MW-204, MW-205, and PW-6; decreased in MW-101, MW-206, MW-502, and MW-503; and increased in MW-501.
- The xylene concentration was nearly the same in MW-101, MW-103, MW-104, MW-203, MW-204, MW-205, and PW-6; decreased in MW-502; and increased in MW-201, MW-206, MW-501, and MW-503.
- The acetone concentration decreased from 1,400 ug/L to non-detectable (less than 10 ug/L) in MW-101, but increased from non-detectable to concentrations of 240 ug/L, 1,700 ug/L, and 45 ug/L in MW-205, MW-502, and PW-6, respectively.
- The thickness of free product in monitoring well MW-504 increased from approximately 0.5 feet to 1.9 feet.

Respectfully submitted,

ERT, Inc.

Daniel C. Oliver
Project Manager

James B. Watson
Manager Environmental Programs

DCO/vj

6.0 REFERENCES

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Bellar, T.A. and Lichtenberg, J.J. 1978. "Semi-Automated Headspace Analysis of Drinking Waters and Industrial Waters for Purgeable Volatile Organic Compounds," Proceedings from Symposium on Measurement of Organic Pollutants in Water and Wastewater, American Society for Testing and Materials, STP 686, C.E. Van Hall, editor.

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APPENDIX A

CHAIN-OF-CUSTODY DOCUMENTS

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
POWERINE / QTK. SPLING.	POWERINE REFINERY
Project No.	**Field Logbook No.**
6310	
Sampler: (Signature)	**Chain of Custody Tape No.**
[signature]	NA

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	EPA 601	EPA 624					REMARKS
MW-001	12/4/87	12:20		Water in VOA	✓	✓					
MW-205	12/2/87	12:20		" " "	✓	✓					
MW-104	12/2/87	17:45		" " "	✓	✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	12/4/87	18:30			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature)	Date	Time
			Ann Bimley	12/2/87	6:40 pm
Sample Disposal Method:			Disposed of by: (Signature)	Date	Time

SAMPLE COLLECTOR

Environmental Research and Technology, Inc.
~~690 Virginia Road~~ 19712 MacArthur Blvd. Suite 365
~~Concord, MA 01742~~ Irvine, CA 92715
~~617 369 8810~~ (714) 476-0321

ANALYTICAL ~~LABORATORY~~

SEE MARK KING FOR PRICE QUOTE

ERT

Nº 7510

1974-3-84

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
Quarter Sampling	Pawerine Refinery
Project No.	**Field Logbook No.**
G310	
Sampler: (Signature)	**Chain of Custody Tape No.**
D Jay Olivier	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	EPA 601	EPA 624					REMARKS
MW-002	12/3/87	10:20		Water in VOA(2)	✓	✓					
MW-101	12/3/87	10:20		" " " "	✓	✓					
MW-103	12/3/87	12:00		" " " "	✓	✓					
MW-201	12/3/87	14:45		" " " "	✓	✓					
MW-503	12/3/87	15:50		" " " "	✓	✓					
MW-203	12/3/87	16:30		" " " "	✓	✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
D Jay Olivier	12/3/87	17:75			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature)	Date	Time
			Dan Burley	12/3/87	5:45pm
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

Environmental Research and Technology, Inc.
~~696 Virginia Road~~ 19782 MacArthur Blvd Suite 365
~~Concord, MA 01742~~ Irvine, CA 92715
~~617-369-8910~~
(714) 476-0721

ANALYTICAL LABORATORY

SEE MARK KENG FOR PRICE QUOTATION

ERT

Nº 7896

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES
ERT / Qtr. Spling	Powerine Refinery	
Project No.	Field Logbook No.	
G340		
Sampler: (Signature)	Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	EPA 601	EPA 624	REMARKS
MW-204	12/4/87	8:45		Water in VOA's (2)	✓	✓	
MW-501	"	9:45		" " " "	✓	✓	
MW-502	"	10:30		" " " "	✓	✓	
MW-206	"	11:30		" " " "	✓	✓	
PW-6	"	11:45		" " " "	✓	✓	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	12/4/87	14:15			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature)	Date	Time
			Don Bunley	12/04/87	2:15
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

Environmental Research and Technology, Inc.
~~696 Virginia Road~~
~~Concord, MA 01742~~
~~617-369-8910~~
17782 Mac Arthur Blvd., 365
Irvine, CA 92715
(714) 476-0321

ANALYTICAL LABORATORY

ERT

№ 7897

APPENDIX B

LABORATORY REPORTS

Chemical Research Laboratories, Inc.
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458

December 21, 1987

ERT
19782 MacArthur Blvd. Ste. 305
Irvine, CA 92712
ATTN: Daniel Oliver

ANALYSIS NO.: 733621-001/006
ANALYSES: EPA Method 601, 624
DATE SAMPLED: 12/02/87
DATE SAMPLE REC'D: 12/02/87
PROJECT: G310 Powerine Refinery

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 733621-001/006 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

REVIEWED AND APPROVED

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • FAX: (714) 891-5917 • (800) LAB-1CRL

December 21, 1987

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

ANALYSIS NO.: 733710-001/006
ANALYSES: EPA Method 601,624
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
PROJECT: G310
Quarter Sampling
Powerine Refinery

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 733710-001/006 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

REVIEWED AND APPROVED

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • FAX: (714) 891-5917 • (800) LAB-1CRL

December 23, 1987

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

ANALYSIS NO.: 733803-001/005
ANALYSES: EPA Method 601,624
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
PROJECT: G 310 Powerine Refinery

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 733803-001/005 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

REVIEWED AND APPROVED

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-101

ANALYSIS NO.: 733710-002
ANALYSES: EPA Method 601
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/09/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	7.7
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	1.2	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	1.5	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
Trichlorofluoromethane	ND(1.)	1,3-Dichlorobenzene	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,4-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)		

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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 101

ANALYSIS NO.: 733710-002
ANALYSES: EPA Method 624
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/10/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	16.
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	140.
Carbon Disulfide	ND(5.)	Cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethyvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 103

ANALYSIS NO.: 733710-003
ANALYSES: EPA Method 601
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/09/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	3.7	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
Trichlorofluoromethane	ND(1.)	1,3-Dichlorobenzene	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,4-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)		

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 103

ANALYSIS NO.: 733710-003
ANALYSES: EPA Method 624
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/11/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	12.
Carbon Disulfide	ND(5.)	Cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethyvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	8.	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

Chemical Research Laboratories, Inc.
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458

LABORATORY REPORT

ERT
19782 MacArthur Blvd. Ste. 305
Irvine, CA 92712
ATTN: Daniel Oliver

Sample ID: MW-104

ANALYSIS NO.: 733621-003
ANALYSES: EPA Method 601
DATE SAMPLED: 12/02/87
DATE SAMPLE REC'D: 12/02/87
DATE ANALYZED: 12/07/87
SAMPLE TYPE: Liquid
PROJECT: G310 Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	(ug/L)		(ug/L)
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichlorofluoromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

Chemical Research Laboratories, Inc.
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LABORATORY REPORT

ERT
19782 MacArthur Blvd. Ste. 305
Irvine, CA 92712
ATTN: Daniel Oliver

Sample ID: MW-104

ANALYSIS NO.: 733621-006
ANALYSES: EPA Method 624
DATE SAMPLED: 12/02/87
DATE SAMPLE REC'D: 12/02/87
DATE ANALYZED: 12/12/87
SAMPLE TYPE: Liquid
PROJECT: G310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	(ug/L)		(ug/L)
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	ND(5.)
Carbon Disulfide	21.	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 201

ANALYSIS NO.: 733710-004
ANALYSES: EPA Method 601
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/09/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	3.	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	3.3	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
Trichlorofluoromethane	ND(1.)	1,3-Dichlorobenzene	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,4-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)		

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SOUTHERN CALIFORNIA DIVISION
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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 201

ANALYSIS NO.: 733710-004
ANALYSES: EPA Method 624
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/11/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	5.
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	290.
Carbon Disulfide	16.	Cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethyvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	11.	Tetrachloroethene	5.
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	6.
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	142.

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SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 203

ANALYSIS NO.: 733710-006
ANALYSES: EPA Method 601
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/09/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	2.	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	7.4	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
Trichlorofluoromethane	ND(1.)	1,3-Dichlorobenzene	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,4-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)		

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • FAX: (714) 891-5917 • (800) LAB-1CRL

LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 203

ANALYSIS NO.: 733710-006
ANALYSES: EPA Method 624
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/11/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	120.
Carbon Disulfide	ND(5.)	Cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethyvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	18.	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(5.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • FAX (714) 891-5917 • (800) LAB-1CRL

LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-204

ANALYSIS NO.: 733803-001
ANALYSES: EPA Method 624
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/12/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	9.
Carbon Disulfide	ND(5.)	Cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethyvinyl ether	ND(5.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	20.	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

Chemical Research Laboratories, Inc.
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-8370 • (213) 598-0458

LABORATORY REPORT

ERT
19782 MacArthur Blvd. Ste. 305
Irvine, CA 92712
ATTN: Daniel Oliver

Sample ID: MW-205

ANALYSIS NO.: 733621-002
ANALYSES: EPA Method 601
DATE SAMPLED: 12/02/87
DATE SAMPLE REC'D: 12/02/87
DATE ANALYZED: 12/07/87
SAMPLE TYPE: Liquid
PROJECT: G310 Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	(ug/L)		(ug/L)
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	1.0	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	6.5	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	1.2	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichlorofluoromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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LABORATORY REPORT

ERT
19782 MacArthur Blvd. Ste. 305
Irvine, CA 92712
ATTN: Daniel Oliver

Sample ID: MW-205

ANALYSIS NO.: 733621-005
ANALYSES: EPA Method 624
DATE SAMPLED: 12/02/87
DATE SAMPLE REC'D: 12/02/87
DATE ANALYZED: 12/11/87
SAMPLE TYPE: Liquid
PROJECT: G310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	(ug/L)		(ug/L)
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	240.	Benzene	ND(5.)
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-206

ANALYSIS NO.: 733803-004
ANALYSES: EPA Method 601
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/10/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	1.2	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	1.7	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	12.4	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-206

ANALYSIS NO.: 733803-004
ANALYSES: EPA Method 624
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/14/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	mg/L		mg/L
Chloromethane	ND(0.5)	1,2-Dichloropropane	ND(0.2)
Bromomethane	ND(0.5)	Trans-1,3-Dichloropropene	ND(0.2)
Vinyl Chloride	ND(0.5)	Trichloroethene	ND(0.2)
Chloroethane	ND(0.5)	Dibromochloromethane	ND(0.2)
Methylene Chloride	ND(0.2)	1,1,2-Trichloroethane	ND(0.2)
Acetone	ND(0.5)	Benzene	7.4
Carbon Disulfide	ND(0.2)	Cis-1,3-Dichloropropene	ND(0.2)
1,1-Dichloroethene	ND(0.2)	2-Chloroethyvinyl ether	ND(0.5)
1,1-Dichloroethane	ND(0.2)	Bromoform	ND(0.2)
Trans-1,2-Dichloroethene	ND(0.2)	4-Methyl-2-Pentanone	ND(0.5)
Chloroform	ND(0.2)	2-Hexanone	ND(0.5)
1,2-Dichloroethane	ND(0.2)	Tetrachloroethene	ND(0.2)
2-Butanone	ND(0.5)	1,1,2,2-Tetrachloroethane	ND(0.2)
1,1,1-Trichloroethane	ND(0.2)	Toluene	2.3
Carbon Tetrachloride	ND(0.2)	Chlorobenzene	ND(0.2)
Vinyl Acetate	ND(0.5)	Ethylbenzene	0.9
Bromodichloromethane	ND(0.2)	Styrene	ND(0.2)
		Total Xylenes	5.

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-501

ANALYSIS NO.: 733803-002
ANALYSES: EPA Method 601
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/14/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L			ug/L
Chloromethane	ND(50.)	*	1,2-Dichloropropane	ND(50.)
Bromomethane	ND(50.)		Trans-1,3-Dichloropropene	ND(50.)
Vinyl Chloride	ND(50.)		Trichloroethene	ND(50.)
Chloroethane	ND(50.)		Dibromochloromethane	ND(50.)
Methylene Chloride	ND(50.)		1,1,2-Trichloroethane	ND(50.)
1,1-Dichloroethene	ND(50.)		Cis-1,3-Dichloropropene	ND(50.)
1,1-Dichloroethane	ND(50.)		2-Chloroethylvinylether	ND(50.)
Trans-1,2-Dichloroethene	ND(50.)		Bromoform	ND(50.)
Chloroform	ND(50.)		Tetrachloroethene	ND(50.)
1,2-Dichloroethane	ND(50.)		1,1,2,2-Tetrachloroethane	ND(50.)
1,1,1-Trichloroethane	ND(50.)		Chlorobenzene	ND(50.)
Carbon Tetrachloride	ND(50.)		Bromodichloromethane	ND(50.)
1,2-Dichlorobenzene	ND(50.)		1,3-Dichlorobenzene	ND(50.)
Trichloroflouromethane	ND(50.)		1,4-Dichlorobenzene	ND(50.)

* Higher detection limit is due to matrix interference.

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-501

ANALYSIS NO.: 733803-002
ANALYSES: EPA Method 624
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/14/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	mg/L		mg/L
Chloromethane	ND(0.5)	1,2-Dichloropropane	ND(0.2)
Bromomethane	ND(0.5)	Trans-1,3-Dichloropropene	ND(0.2)
Vinyl Chloride	ND(0.5)	Trichloroethene	ND(0.2)
Chloroethane	ND(0.5)	Dibromochloromethane	ND(0.2)
Methylene Chloride	ND(0.2)	1,1,2-Trichloroethane	0.3
Acetone	ND(0.5)	Benzene	8.3
Carbon Disulfide	0.4	Cis-1,3-Dichloropropene	ND(0.2)
1,1-Dichloroethene	ND(0.2)	2-Chloroethyvinyl ether	ND(0.5)
1,1-Dichloroethane	ND(0.2)	Bromoform	ND(0.2)
Trans-1,2-Dichloroethene	ND(0.2)	4-Methyl-2-Pentanone	ND(0.5)
Chloroform	ND(0.2)	2-Hexanone	ND(0.5)
1,2-Dichloroethane	ND(0.2)	Tetrachloroethene	ND(0.2)
2-Butanone	ND(0.5)	1,1,2,2-Tetrachloroethane	ND(0.2)
1,1,1-Trichloroethane	ND(0.2)	Toluene	2.
Carbon Tetrachloride	ND(0.2)	Chlorobenzene	ND(0.2)
Vinyl Acetate	ND(0.5)	Ethylbenzene	0.4
Bromodichloromethane	ND(0.2)	Styrene	ND(0.2)
		Total Xylenes	1.1

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-502

ANALYSIS NO.: 733803-003
ANALYSES: EPA Method 601
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/10/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	17.	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW-502

ANALYSIS NO.: 733803-003
ANALYSES: EPA Method 624
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/14/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	mg/L		mg/L
Chloromethane	ND(0.5)	1,2-Dichloropropane	ND(0.2)
Bromomethane	ND(0.5)	Trans-1,3-Dichloropropene	ND(0.2)
Vinyl Chloride	ND(0.5)	Trichloroethene	ND(0.2)
Chloroethane	ND(0.5)	Dibromochloromethane	ND(0.2)
Methylene Chloride	ND(0.2)	1,1,2-Trichloroethane	ND(0.2)
Acetone	1.7	Benzene	13.
Carbon Disulfide	ND(0.2)	Cis-1,3-Dichloropropene	ND(0.2)
1,1-Dichloroethene	ND(0.2)	2-Chloroethyvinyl ether	ND(0.5)
1,1-Dichloroethane	ND(0.2)	Bromoform	ND(0.2)
Trans-1,2-Dichloroethene	ND(0.2)	4-Methyl-2-Pentanone	1.
Chloroform	ND(0.2)	2-Hexanone	ND(0.5)
1,2-Dichloroethane	ND(0.2)	Tetrachloroethene	ND(0.2)
2-Butanone	ND(0.5)	1,1,2,2-Tetrachloroethane	ND(0.2)
1,1,1-Trichloroethane	ND(0.2)	Toluene	1.2
Carbon Tetrachloride	ND(0.2)	Chlorobenzene	ND(0.2)
Vinyl Acetate	ND(0.5)	Ethylbenzene	0.9
Bromodichloromethane	ND(0.2)	Styrene	ND(0.2)
		Total Xylenes	4.8

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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 503

ANALYSIS NO.: 733710-005
ANALYSES: EPA Method 601
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/09/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(10.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(10.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(10.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(10.)
Methylene Chloride	ND(10.)	1,1,2-Trichloroethane	ND(10.)
1,1-Dichloroethene	ND(10.)	Cis-1,3-Dichloropropene	ND(10.)
1,1-Dichloroethane	ND(10.)	2-Chloroethylvinylether	ND(10.)
Trans-1,2-Dichloroethene	12.	Bromoform	ND(10.)
Chloroform	ND(10.)	Tetrachloroethene	ND(10.)
1,2-Dichloroethane	ND(10.)	1,1,2,2-Tetrachloroethane	ND(10.)
1,1,1-Trichloroethane	ND(10.)	Chlorobenzene	ND(10.)
Carbon Tetrachloride	ND(10.)	Bromodichloromethane	ND(10.)
Trichlorofluoromethane	ND(10.)	1,3-Dichlorobenzene	ND(10.)
1,2-Dichlorobenzene	ND(10.)	1,4-Dichlorobenzene	ND(10.)
Trichloroflouromethane	ND(10.)		

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LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 503

ANALYSIS NO.: 733710-005
ANALYSES: EPA Method 624
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/11/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(20.)*	1,2-Dichloropropane	ND(10.)
Bromomethane	ND(20.)	Trans-1,3-Dichloropropene	ND(10.)
Vinyl Chloride	ND(20.)	Trichloroethene	ND(10.)
Chloroethane	ND(20.)	Dibromochloromethane	ND(10.)
Methylene Chloride	ND(10.)	1,1,2-Trichloroethane	ND(10.)
Acetone	ND(20.)	Benzene	220.
Carbon Disulfide	ND(10.)	Cis-1,3-Dichloropropene	ND(10.)
1,1-Dichloroethene	ND(10.)	2-Chloroethyvinyl ether	ND(20.)
1,1-Dichloroethane	ND(10.)	Bromoform	ND(10.)
Trans-1,2-Dichloroethene	20.	4-Methyl-2-Pentanone	ND(20.)
Chloroform	ND(10.)	2-Hexanone	ND(20.)
1,2-Dichloroethane	ND(10.)	Tetrachloroethene	ND(10.)
2-Butanone	ND(20.)	1,1,2,2-Tetrachloroethane	ND(10.)
1,1,1-Trichloroethane	ND(10.)	Toluene	44.
Carbon Tetrachloride	ND(10.)	Chlorobenzene	ND(10.)
Vinyl Acetate	ND(20.)	Ethylbenzene	ND(10.)
Bromodichloromethane	ND(10.)	Styrene	ND(10.)
		Total Xylenes	660.

* Higher detection limit due to concentration of xylenes.

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: PW-6

ANALYSIS NO.: 733803-005
ANALYSES: EPA Method 601
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/10/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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LABORATORY REPORT

ERT
17782 Mac Arthur Blvd. Suite 365
Irvine, CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: PW-6

ANALYSIS NO.: 733803-005
ANALYSES: EPA Method 624
DATE SAMPLED: 12/04/87
DATE SAMPLE REC'D: 12/04/87
DATE ANALYZED: 12/14/87
SAMPLE TYPE: Water
PROJECT: G 310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	45.	Benzene	ND(5.)
Carbon Disulfide	24.	Cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethyvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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7440 Lincoln Way • Garden Grove, CA 92641
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LABORATORY REPORT

ERT
19782 MacArthur Blvd. Ste. 305
Irvine, CA 92712
ATTN: Daniel Oliver

Sample ID: MW-001

ANALYSIS NO.: 733621-001
ANALYSES: EPA Method 601
DATE SAMPLED: 12/02/87
DATE SAMPLE REC'D: 12/02/87
DATE ANALYZED: 12/07/87
SAMPLE TYPE: Liquid
PROJECT: G310 Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	(ug/L)		(ug/L)
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichlorofluoromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

Chemical Research Laboratories, Inc.
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-8370 • (213) 598-0458

LABORATORY REPORT

ERT
19782 MacArthur Blvd. Ste. 305
Irvine, CA 92712
ATTN: Daniel Oliver

Sample ID: MW-001

ANALYSIS NO.: 733621-004
ANALYSES: EPA Method 624
DATE SAMPLED: 12/02/87
DATE SAMPLE REC'D: 12/02/87
DATE ANALYZED: 12/11/87
SAMPLE TYPE: Liquid
PROJECT: G310 Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	(ug/L)		(ug/L)
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	11.
Carbon Disulfide	18.	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(5.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	20.

Chemical Research Laboratories, Inc.
SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • FAX: (714) 891-5917 • (800) LAB-1CRL

LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 002

ANALYSIS NO.: 733710-001
ANALYSES: EPA Method 601
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/09/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 601/8010 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
Trichlorofluoromethane	ND(1.)	1,3-Dichlorobenzene	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,4-Dichlorobenzene	ND(1.)
Trichloroflouromethane	ND(1.)		

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SOUTHERN CALIFORNIA DIVISION
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • FAX: (714) 891-5917 • (800) LAB-1CRL

LABORATORY REPORT

ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC.
19782 Mac Arthur Blvd. Suite 365
Irvine CA 92715
ATTN: Mr. Daniel Oliver

SAMPLE ID: MW - 002

ANALYSIS NO.: 733710-001
ANALYSES: EPA Method 624
DATE SAMPLED: 12/03/87
DATE SAMPLE REC'D: 12/03/87
DATE ANALYZED: 12/11/87
SAMPLE TYPE: Water
PROJECT: G310
Quarter Sampling
Powerine Refinery

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/L		ug/L
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	ND(5.)
Carbon Disulfide	6.	Cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethyvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

environmental and engineering excellence

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HOUSTON, TEXAS	(713) 520-9900
SEATTLE, WASHINGTON	(206) 454-9124

ERT

A RESOURCE ENGINEERING COMPANY

S.C.S.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

In Reply T-3-2
Refer To: C(85)C302

24 OCT 1985

Dave Hartley
Toxics Substances Control Division
California Department of Health Services
714 "P" Street
Sacramento, CA 95814

Dear Mr. Hartley:

A copy of the investigation report C(85)C302 is enclosed for your information. The inspection was conducted by Ecology & Environment under contract to the EPA.

Please allow 20 days from the date the report is received by your office before releasing the information, in order to give the facility the opportunity to claim confidentiality.

If you have any questions or comments, please direct them to Jeff Rosenbloom, Enforcement Section at (415) 974-7513.

Sincerely,

for Kathleen G. Shimmin
Chief, Field Operations Branch

Enclosure

Pomerene Oil Co
Santa Fe Springs
SWIS ID
M. Fox 3/6/86

ecology and environment, inc.
120 HOWARD STREET, SUITE #640, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415-777-2811
International Specialists in the Environmental Sciences

Purpose: Site Inspection Report

Site: Powerine Oil Company
12354 Lakeland Road
Santa Fe Springs, CA

Site ERRIS ID Number: CA D 008383291

Inspection ID Number: C(85) C302

TDD Number: R-09-8507-02

FIT Investigator(s): Elaine Silvestro
Luis Morales

Date of Inspection: AUG. 1 ~~June~~, 1985

Report Prepared By: Elaine Silvestro

Report Date: August 5, 1985

TABLE OF CONTENTS

1.0 INTRODUCTION

A site inspection of the Powerine Oil Company was conducted on August 1, 1985, pursuant to the Environmental Protection Agency's (EPA) Technical Directive Document (TDD) R-09-8507-02. The primary purpose of this investigation was to gather information on historical waste management practices at Powerine Oil Company and local environmental factors to determine whether a potential threat exists to public health or the environment. This work was conducted by Ecology and Environment, Inc.'s (E & E) Field Investigation Team (FIT) under contract to the EPA.

In gathering background information on the Powerine Oil Company site, FIT personnel contacted individuals at several state and local agencies and conducted file searches at the Department of Health Services (DOHS) and Regional Water Quality Control Board (RWQCB).

A list of individuals and organizations contacted is presented below (Contact Reports are presented in Appendix A):

Harriet Tregoning/ Mary Osborne	California DOHS, Toxic Substances Control Division, Los Angeles, CA
Nelson Wong/Tom Bell Frank Mele	California RWQCB, Los Angeles, CA

Information obtained from these sources was used to prepare the Site History and Description section of this report and to plan field investigation efforts summarized in Section 4.0. The EPA Site Inspection Form is included in Appendix B.

2.0 SITE HISTORY AND DESCRIPTION

2.1 Site Location

The Powerine Oil Company is located at 12354 Lakeland Road, Santa Fe Springs, California. The site is an irregular shaped parcel of approximately 93 acres. The site is located between Florence Avenue, Lakeland Road, and Norwalk Boulevard. The legal description is at a longitude of 118° 04' 18" and a latitude of 33° 56' 30" (see Figure 1).

The refinery is bounded by Powerine Oil Company offices and truck loading facilities to the south. To the west are offices and a gravel operation and to the east is a new tank farm. To the north are offices and a oil field. A plot plan of Powerine Oil Company is presented in Figure 2.

2.2 Site History

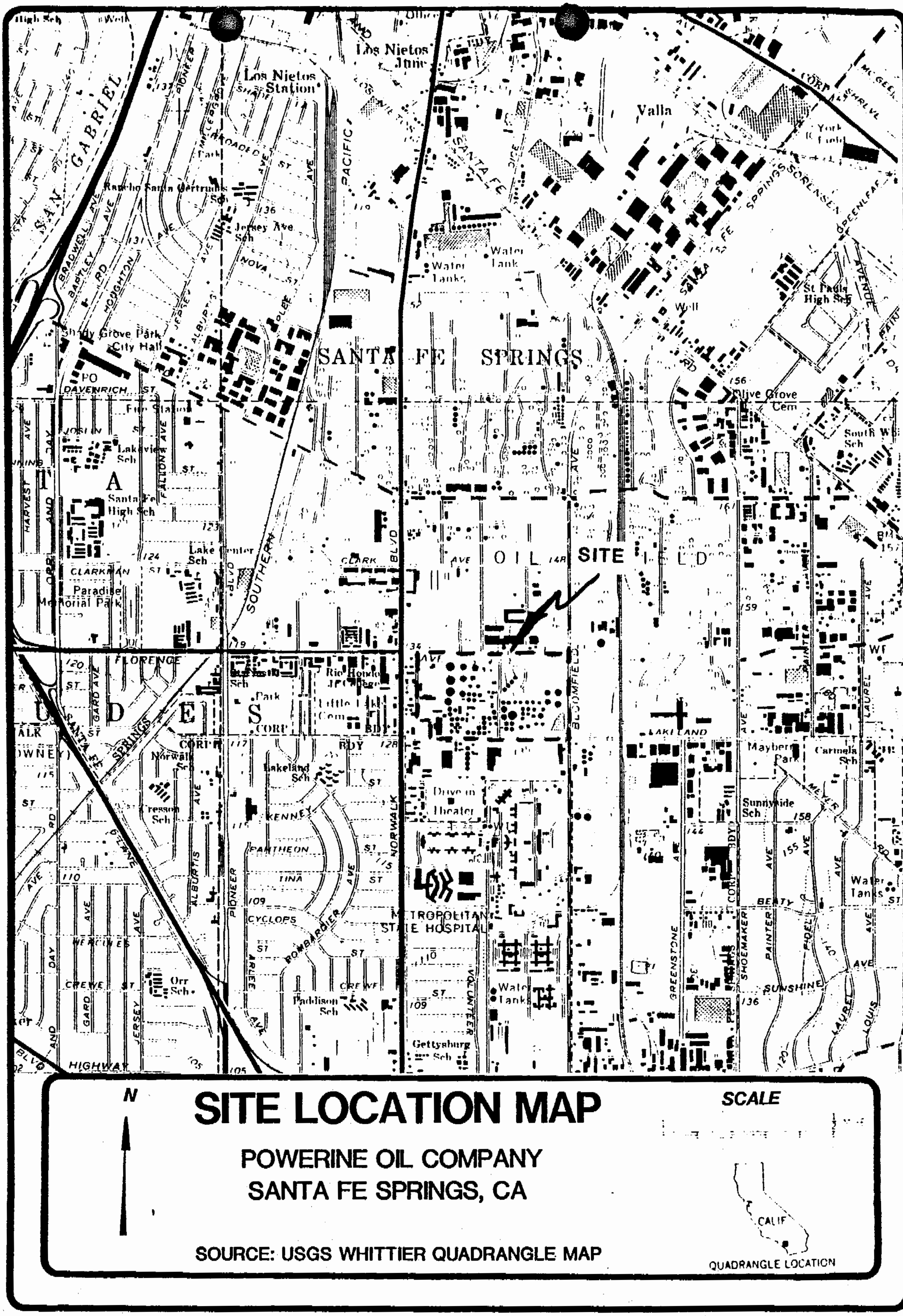
The site has been used for refinery purposes since the 1930's. Santa Fe Springs was once a major oil producing region. The oil fields are still active but production is less important than in the past. The Rothschild Oil Company purchased the Powerine site in 1936 from Bellevue Oil. The current owners are Harry S. Rothschild and Josephine E. Kebow, with Harry S. Rothschild as managing partner.

The original refinery capacity was 7,000 barrels per day in 1968, and 44,000 barrels per day in 1975. No oil is currently being refined but the air compressor and cooling towers are operated eight hours daily for maintenance purposes. All storage tanks are empty except for a few leased to Coastal Petroleum. The Powerine Oil Company filed under Chapter 11 of the National Bankruptcy Act on March 26, 1984, claiming liabilities exceed the company's assets by $70 million.

Process Description

Since 1936, Powerine has expanded from its original 38 acres to 93 acres. This includes a large parcel of land (23 acres) across Bloomfield Road. The refinery used crude oil and raw naptha as feedstocks to produce gasoline, diesel, and jet fuel. All products were

FIGURE 1


SITE LOCATION MAP
POWERINE OIL COMPANY
SANTA FE SPRINGS, CA
SOURCE: USGS WHITTIER QUADRANGLE MAP
N
SCALE
CALIF
QUADRANGLE LOCATION
SITE
SANTA FE SPRINGS
OIL FIELD
Los Nietos Station
Valla
FLORENCE
METROPOLITAN STATE HOSPITAL
BLOOMFIELD
NORWALK BLVD
SAN GABRIEL
Rio Hondo JR College
Little Lake Cem
Olive Grove Cem
Drive in Theater
Gettysburg Sch
Santa Fe High Sch
Paradise Memorial Park
Lakeland Sch
Mayberry Park
Carmela Sch
Sunnyside Sch
Water Tanks
St Pauls High Sch

stored on-site in labeled, different sized tanks. Two by-products, coke and sulfur, were sold off. These also were stored on-site until they could be removed by railroad or truck.

2.3 Waste Management Practices

The refinery previously produced approximately 195,000 gallons per day of wastewater. Waste streams contained the following compounds: ammonia, dissolved sulfides, cyanide, chromium, iron, zinc, phenols, and thiosulfate. Oil and grease were also in these waste streams.

The waste streams were first sent to three holding tanks, the pH and concentration levels were tested and any excess oil was removed to the slop tank. After pre-treatment these waste streams were discharged into the sanitary sewer system.

Rainwater runoff is collected by a diversion ditch built 10 years ago that feeds into the impounding basin. The ditch and the basin are lined with reinforced concrete and are located on the eastern end of the refinery. Any oil is removed from the rainwater by an oil skimmer, and then rainwater is discharged into the storm drain in Lakeland Road. This storm drain eventually discharges to Coyote Creek, a tributary to the San Gabriel River at Stearns Street, above the tidal prism in Long Beach. Concerns have been raised about the runoff transporting pollutants from the tank farm and other open areas of the refinery to the storm drainage.

Other types of wastes generated at the refinery are alkaline sludge/solution, asbestos-containing insulation, fluid catalytic cracker waste, and API separator sludge. This list also contains tank, still, and sump sediments.

Since the 1940's these wastes were disposed of at various dump sites. Table 1 in Appendix C contains a complete list of sites, dates, and waste types disposed.

2.4 Enforcement History

Powerine Oil Company has been cited on numerous occasions for non-compliance and illegal discharge violations. The majority have been violations of Sanitation Districts Ordinance, Sections 406C, 406H

and 406R, of the Sanitation Districts Waste Water Ordinance. The company has violated LACSD Ordinance Section 406M. Records for violations exist from 1970 to 1984, though no records exist for violations prior to 1970. A list of these violations are delineated in Appendix C.

The California Regional Water Quality Control Board (RWQCB) on February 28, 1985 adopted Order No. 85-17 relative to subsurface water quality investigations at refinery sites. It was ordered that Powerine Oil Company conduct an investigation and site assessment to detect and characterize any groundwater pollution beneath the facility. The investigation and assessment should at a minimum identify the following:

- Areas ("plumes") and chemical nature of the pollution in the groundwater;

- Existence and extent of any free hydrocarbon pools on the groundwater surface including chemical characterization of the hydrocarbons;

- Extent and chemical nature of any pollutants (particularly hydrocarbons) that may be absorbed onto the soils in the unsaturated (vadose) zones or be present as vapors; and

- Data on the subsurface geology and hydraulic properties of the aquifers underlying the facilities including estimated direction and flow rate of the groundwater.

In the event a condition of pollution is determined in the above investigation and site assessment, remedial measures and a time-table for implementation and compliance are also required.

In July 1985, IT Corporation (Project No. 850009) submitted a revised plan for investigation and site assessment of potential subsurface pollution at Powerine Oil Company Refinery. This report was submitted to the RWQCB (IT Corporation, 1985).

The plan outlined two phases. Phase I includes installation of four wells to determine subsurface stratigraphy and to define the groundwater gradient. Phase II involves installation of six more wells and ten borings for additional sampling.

Soil sampling and vapor monitoring is also proposed (see Figure 2 for proposed locations).

3.0 ENVIRONMENTAL SETTING/HRS FACTORS

3.1 Physical Setting

The Powerine Oil Company covers 93 acres in the Santa Fe Springs Plain area southwest of the San Gabriel Valley and the Puente Hills (SE 1/4, Section 1, T.3.S., R.11.W., Los Angeles County). The central coastal plain (known as Santa Fe Springs Plain) consists of alluvial fans formed from aggradation of the Los Angeles, San Gabriel, and Santa Ana Rivers during the late Pleistocene. These rivers originate in the bordering hills and mesas north and east of the area and empty in San Pedro Bay (Pacific Ocean). Elevations in the refinery area range from 130 to 145 feet above mean sea level with a resulting horizontal grade of less than two percent. Gradients increase north of the site.

The refinery is bordered on the west and south by an industrial area and by residential developments on the north and east. These urbanized areas include portions of the Mirada, Norwalk, and Santa Fe Springs. These three cities have a combined population in excess of 100,000 people.

The industrial area is primarily related to petroleum activities including oil wells and refineries. Industrial development has generally grown parallel to the Atchinson, Topeka, and Santa Fe Railroad, which is one and a half miles southwest of the site.

3.2 Soils

Variable soils types are encountered in the Santa Fe Springs coastal plain. Soil boring logs at Powerine (California DOHS, 1984) indicate that the refinery is underlain by a clay layer that extends from the surface to a depth of approximately 15 feet. This clay layer is underlain by a silty sand layer about 5 feet thick, then sand to a depth by about 80 feet. An interval of silty sand was encountered below 80 feet.

3.3 Hydrogeology

The Powerine facility is located on the Santa Fe Springs Plain which consists of terrace deposits of Upper Pleistocene Age. These deposits form a portion of the Montebello Forebay area.

The water-bearing sediments underlying the site range from upper and lower Pleistocene and extend to a depth of about 1,000 feet. The major water-bearing units of interest are the Exposition aquifer and the perched groundwater that might be present above the Exposition aquifer. The Exposition aquifer underlies the refinery at estimated depths of between 100 and 200 feet. The Exposition aquifer is composed of sand and gravel with some clay (California DOHS, 1984).

Overlying the Exposition aquifer are terrace deposits of the Lakewood formation which may contain perched groundwater. Locally, these deposits could be up to 100 feet thick. They are composed of a mixture of marine and continental gravel, sand, silt, and clay with shale pebbles. Based on soil borings at the refinery, no perched groundwater is expected. Depth to groundwater is expected to be on the order of 60 feet based on 1984 water-level data in the area (Central and West Basin Water Replenishment District, 1985).

3.4 Surface Water

Most of the streams within the Santa Fe Springs Plain have intermittent flow. Flash floods occur during heavy rains. Under natural conditions these streams meandered widely in shallow braided channels. Some of the major stream channels running through the area and into San Pedro Bay have been straightened and lined with concrete for flood control purposes.

The closest surface water to Powerine Oil Company is Coyote Creek at a distance of three-quarters of a mile to the southeast. Coyote Creek has been straightened and lined with concrete at the northern end. To the west is the San Gabriel River and the Los Angeles River at distances of less than two miles and six miles, respectively.

4.0 SUMMARY OF FIT INVESTIGATION EFFORTS

On August 1, 1985 a preliminary field inspection of the refinery was conducted by Luis Morales and Elaine Silvestro of E & E's FIT. The primary purpose of this inspection was to collect information to determine if a threat to public health or the environment exists. Mr. Walter J. Ziemba, Powerine Oil Company coordinator of environmental affairs, conducted the refinery tour and answered questions relating to hazardous materials handling.

A drive-through was conducted of the refinery process and storage tank areas and around the impounding basin. The following observations were made:

- There was evidence of oil spilled or dumped on the ground in various locations of the refinery; and

- Eight tanks, 2-10,000 gallon, 2-27,000 gallon, 2-40,000 gallon, and 2-96,000 gallon have leaked but dates and amounts of leakage are unknown. These tanks have since been emptied and cleaned. The contents and locations are listed on Figure 2.

The Powerine Oil Company is presently deciding whether to sell off the refinery, lease the refinery or to bulldoze the facility.

5.0 CONCLUSION AND RECOMMENDATIONS

Powerine Oil Company began operations in 1936. The refinery used raw naptha and crude oil as feedstocks to produce gasoline, diesel, and jet fuel. Since 1984, there has been no oil refined at the site.

According to Powerine Oil Company representatives, all hazardous wastes were disposed of off-site, sludge and solids to approved disposal dumps. Pre-treated process water and rainwater runoff are discharged to the sewer.

In compliance with Order No. 85-17 (see Section 2.4), Powerine Oil Company has contracted IT Corporation to address the nature and extent of potential groundwater contamination resulting from the facility's activities. Due to the groundwater monitoring program submitted by IT Corporation to the RWQCB, no further investigative work by FIT is recommended (IT Corporation, 1985). FIT recommends that the results of the analytical work provided to the RWQCB be reviewed and evaluated for usefulness in upgrading the EPA Site Inspection Form.

6.0 REFERENCES

1. Environmental Protection Agency; Notification of Hazardous Waste Sites filled by Powerine Oil Company, June 9, 1981.

2. Los Angeles County Engineers, Violations and Permits of Powerine Oil Company, May 16, 1984.

3. Sanitation District of Los Angeles County, Violations of Powerine Oil Company, May 15, 1984.

4. South Coast Air Quality Management District (SCAQMD); Inspections and Complaints of Powerine Oil Company, May 30, 1984.

5. State of California, Department of Health Services; Preliminary Assessment Summary of Powerine Oil Company, June 1984.

6. State of California Regional Water Quality Control Board; IT Corporation, Project Number 850009, July 1985, revised plan for investigation and site assessment for potential subsurface pollution at Powerine Oil Company Refinery, Santa Fe Springs, California, Ed Sinota.

APPENDIX A

Contact Log and Reports

CONTACT REPORT

AGENCY: California Department of Health Services

ADDRESS: 107 South Broadway, Los Angeles, CA

PERSON CONTACTED: Harriet Tragonie/Mary Osborne

FROM: Elaine Silvestro

TO: File - Powerine Oil Company

DATE: July 22, 1985

SUBJECT: Powerine Oil Company, Santa Fe Springs, CA

FIT reviewed the file on Powerine Oil Company in Department of Health Services. There was no new information provided.

CONTACT REPORT

AGENCY: California Regional Water Quality Control Board

ADDRESS: 107 South Broadway, Los Angeles, CA

PERSON CONTACTED: Nelson Wong/Tom Bell

FROM: Elaine Silvestro

TO: File - Powerine Oil Company

DATE: July 25, 1985

SUBJECT: Powerine Oil Company, Santa Fe Springs, CA

FIT reviewed the file on Powerine Oil Company in Regional Water Quality Control Board. Additional information was provided and copied.

CONTACT REPORT

AGENCY: California Regional Water Quality Control Board

ADDRESS: 107 South Broadway, Los Angeles, CA

PERSON CONTACTED: Frank Mele

FROM: Elaine Silvestro

TO: File - Powerine Oil Company

DATE: August 6, 1985

SUBJECT: Powerine Oil Company, Santa Fe Springs, CA

FIT reviewed the proposal submitted by IT Corporation on Powerine Oil Company.

APPENDIX B

Potential Hazardous Waste Site Inspection Report
EPA Form 2070-13

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION	
01 State: CA	02 Site Number: 357

II. SITE NAME AND LOCATION

01 Site Name (Legal, common, or descriptive name of site)	02 Street, Route No., or Specific Location Identifier				
Powerine Oil Company	12354 Lakeland Road				
03 City	**04 State**	**05 Zip Code**	**06 County**	**07 County Code**	**08 Cong Dist**
Santa Fe Springs	CA	90670	Los Angeles	037	33

09 Coordinates		10 Type of Ownership (Check one)
Latitude	Longitude	
33° 56' 30".	118° 04' 18".	[X] A. Private [ ] B. Federal _____ [ ] C. State [ ] D. County [ ] E. Municipal [ ] F. Other _____ [ ] G. Unknown

III. INSPECTION INFORMATION

01 Date of Inspection	02 Site Status	03 Years of Operation
08 / 01 / 85 (Month Day Year)	[ ] Active [X] Inactive	Approx. 1936 (Beginning Year) | 1984 (Ending Year) | ____ Unknown

04 Agency Performing Inspection (Check all that apply)
[ ] A. EPA [X] B. EPA Contractor Ecology & Environment, Inc (Name of firm) [ ] C. Municipal [ ] D. Municipal Contractor _____ (Name of firm)
[ ] E. State [ ] F. State Contractor _____ (Name of firm) [ ] G. Other _____ (Specify)

05 Chief Inspector	06 Title	07 Organization	08 Telephone No.
Elaine Silvestro	Chemical Engineer	E & E	(213)481-3870
09 Other Inspectors	**10 Title**	**11 Organization**	**12 Telephone No.**
Luis Morales	Geologist	E & E	(213)481-3870
			( )
			( )

13 Site Representatives Interviewed	14 Title	15 Address	16 Telephone No.
Mr. Walter Ziemba	Coordinator	12354 Lakeland Road	(213)944-6111
			( )
			( )
			( )
			( )

17 Access Gained By (Check one)	18 Time of Inspection	19 Weather Conditions
[X] Permission [ ] Warrant	2:45 PM	Sunny, 76°F

IV. INFORMATION AVAILABLE FROM

01 Contact	02 Of (Agency/Organization)	03 Telephone No.
Jeff Rosenbloom	EPA	(415)974-7513

04 Person Responsible for Site Inspection Form	05 Agency	06 Organization	07 Telephone No.	08 Date
Elaine Silvestro		E & E	(213)481-3870	08 /05 /85 (Month Day Year)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 Physical States (Check all that apply)

- [X] A. Solid
- [ ] B. Powder, Fines
- [X] C. Sludge
- [ ] D. Other _____ (Specify)
- [ ] E. Slurry
- [X] F. Liquid
- [ ] G. Gas

02 Waste Quantity at Site (Measure of waste quantities must be independent)

Tons unknown
Cubic Yards ?
No. of Drums unknown

03 Waste Characteristics (Check all that apply)

- [X] A. Toxic
- [ ] B. Corrosive
- [ ] C. Radioactive
- [X] D. Persistent
- [ ] E. Soluble
- [ ] F. Infectious
- [X] G. Flammable
- [ ] H. Ignitable
- [ ] I. Highly Volatile
- [X] J. Explosive
- [ ] K. Reactive
- [ ] L. Incompatible
- [ ] M. Not Applicable

III. WASTE TYPE

Category	Substance Name	01 Gross Amount	02 Unit of Measure	03 Comments
SLU	Sludge	unknown	unknown	probable, amount unknown
OLW	Oily Waste	unknown	unknown	probable, amount unknown
SOL	Solvents			
PSD	Pesticides			
OCC	Other Organic Chemicals	unknown	unknown	unknown, but probable
IOC	Inorganic Chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy Metals	unknown	unknown	probable, amount unknown

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 Category	02 Substance Name	03 CAS Number	04 Storage/Disposal Method	05 Concentration	06 Measure of Concentration
	ammonia	7664-41-7			
	Phenol	108-95-2			
	cyanide				
	chromium				
	iron				
	zinc				
	thiosulfate				
	oil/grease				
	coke				
	kerosene				
	gasoline				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

Category	01 Feedstock Name	02 CAS Number	Category	01 Feedstock Name	02 CAS Number
FDS	Crude oil		FDS		
FDS	Raw Naptha		FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Site File, Site Inspection

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 State: CA | 02 Site Number: 357

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. Groundwater Contamination
02 ☐ Observed (Date: _____) ☒ Potential ☐ Alleged
03 Population Potentially Affected: _____
04 Narrative Description

As required by RWQCB: Hydrogeological investigation to be conducted to determine if GW contamination exists and to what extent.

---

01 ☐ B. Surface Water Contamination
02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None documented

---

01 ☒ C. Contamination of Air
02 ☐ Observed (Date: _____) ☐ Potential ☒ Alleged
03 Population Potentially Affected: Unknown
04 Narrative Description

On 5-21-82 discharged material that caused a major odor problem in the Florence Avenue Trunk Sewer. File from Sanitary District of LA County 5-26-82 Violation Notice No. 20719 of mercaptan discharge also 2-21-84 catalytic dust and mist fall out.

---

01 ☒ D. Fire/Explosive Conditions
02 ☐ Observed (Date: _____) ☒ Potential ☐ Alleged
03 Population Potentially Affected: Unknown
04 Narrative Description

On 5-25-82 discharged material that caused explosive conditions into Florence Avenue Trunk Sewer (File from Sanitary District of LA County) - 12/1/83 and 12/13/83 on-site fires.

---

01 ☐ E. Direct Contact
02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None documented

---

01 ☒ F. Contamination of Soil
02 ☒ Observed (Date: _____) ☐ Potential ☒ Alleged
03 Area Potentially Affected: Unknown
04 Narrative Description

LACE issued violation (1-10-83) for discharge of petroleum oil and wastewater onto the ground and into refinery sump. Visible housekeeping deficiencies noted during inspection.

---

01 ☐ G. Drinking Water Contamination
02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None documented

---

01 ☐ H. Worker Exposure/Injury
02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
03 Workers Potentially Affected: _____
04 Narrative Description

None documented

---

01 ☐ I. Population Exposure/Injury
02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None documented

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. Damage to Flora — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None documented

01 ☐ K. Damage to Fauna — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None documented

01 ☐ L. Contamination of Food Chain — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None documented

01 ☒ M. Unstable Containment of Wastes (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ Observed (Date: _____) ☐ Potential ☒ Alleged
03 Population Potentially Affected: Unknown — 04 Narrative Description

8 leaking tanks, spills of oil/grease.

01 ☒ N. Damage to Offsite Property — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

Numerous violations of discharge of Industrial Waste onto Lakeland Avenue.

01 ☒ O. Contamination of Sewers, Storm/Drains, WWTPs — 02 ☐ Observed (Date: _____) ☐ Potential ☒ Alleged
04 Narrative Description

Numerous violations of discharge of Industrial Wastes (eg. ammonia, mercaptan, sulfides) to Florence Avenue Trunk Sewer.

01 ☐ P. Illegal/Unauthorized Dumping — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

Possible disposal of wastes on-site may have occurred.

05 Description of Any Other Known, Potential, or Alleged Hazards

III. TOTAL POPULATION POTENTIALLY AFFECTED:

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

RWQCB, DOHS, Sanitary District of LA, SCAQMD Files
LA County Engineer

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

II. PERMIT INFORMATION

01 Type of Permit Issued (Check all that apply)	02 Permit Number	03 Date Issued	04 Expiration Date	05 Comments
[X] A. NPDES	CA 0057177		6-80	
[ ] B. UIC				
[ ] C. AIR				
[ ] D. RCRA				
[X] E. RCRA INTERIM STATUS				
[ ] F. SPCC PLAN				
[ ] G. STATE (Specify)				
[X] H. Local (Specify)	2456, 2458	1982		LA County wastewater discharge permit
[X] I. Other (Specify)	15, 2, 44, 50 15	1960, 61, 65, 66, 71		land expansion for the refinery (zoning permit)
[ ] J. None				

III. SITE DESCRIPTION

01 Storage/Disposal (Check all that apply)	02 Amount	03 Unit of Measure
[ ] A. Surface Impoundment		
[ ] B. Piles		
[X] C. Drums, Above Ground		
[X] D. Tank, Above Ground		
[ ] E. Tank, Below Ground		
[ ] F. Landfill		
[ ] G. Landfarm		
[ ] H. Open Dump		
[ ] I. Other (Specify)		

04 Treatment (Check all that apply)

- [ ] A. Incineration
- [ ] B. Underground Injection
- [ ] C. Chemical/Physical
- [ ] D. Biological
- [ ] E. Waste Oil Processing
- [ ] F. Solvent Recovery
- [ ] G. Other Recycling/ Recovery
- [ ] H. Other (Specify)

05 Other

- [X] A. Buildings On Site

06 Area of Site

92.7 Acres

07 Comments

IV. CONTAINMENT

01 Containment of Wastes (Check one)

[X] A. Adequate, Secure (previous containment of wastes unknown) [ ] B. Moderate [ ] C. Inadequate, Poor [ ] D. Insecure, Unsound, Dangerous

02 Description of Drums, Diking, Liners, Barriers, etc.

There are 3 foot retaining walls around the tanks in case of a spill. The impounding basin is lined with reinforced concrete along with the rainwater runoff ditch.

V. ACCESSIBILITY

01 Waste Easily Accessible: [ ] Yes [X] No

02 Comments

Fenced and patrolling guards.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site Inspection
LA County Files

EPA Files
On-site observation

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 State	02 Site Number
CA	357

II. DRINKING WATER SUPPLY

01 Type of Drinking Supply (Check as applicable)

	SURFACE	WELL
Community	A. ☐	B. ☐
Non-Community	C. ☐	D. ☐

02 Status

	ENDANGERED	AFFECTED	MONITORED
	A. ☐	B. ☐	C. ☐
	D. ☐	E. ☐	F. ☐

03 Distance to Site

A. _____ (mi)

B. _____ (mi)

III. GROUNDWATER

01 Groundwater Use in Vicinity (Check one)

☐ A. Only Source for Drinking

☒ B. Drinking (Other sources available) Commercial, Industrial, Irrigation (No other water sources available)

☐ C. Commercial, Industrial, Irrigation (Limited other sources available)

☐ D. Not Used, Unuseable

02 Population Served by Ground Water _____

03 Distance to Nearest Drinking Water Well _____ (mi)

04 Depth to Groundwater	05 Direction of Groundwater Flow	06 Depth to Aquifer of Concern	07 Potential Yield of Aquifer	08 Sole Source Aquifer
60 (ft)	south	100-200 (ft)	_____ (gpd)	☒ Yes ☐ No

09 Description of Wells (Including useage, depth, and location relative to population and buildings)

N/A

10 Recharge Area		11 Discharge Area	
☐ Yes	Comments	☐ Yes	Comments
☒ No		☐ No	

IV. SURFACE WATER

01 Surface Water (Check one)

☐ A. Reservior, Recreation Drinking Water Source

☐ B. Irrigation, Economically Important Resources

☐ C. Commercial, Industrial

☐ D. Not Currently Used

02 Affected/Potentially Affected Bodies of Water

Name:	Affected	Distance to Site
Coyote Creek	☐	3/4 southeast (mi)
	☐	_____ (mi)
	☐	_____ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 Total Population Within

One (1) Mile of Site	Two (2) Miles of Site	Three (3) Miles of Site
A. _____ No. of Persons	B. _____ No. of Persons	C. >100,000 No. of Persons

02 Distance to Nearest Population

.10 (mi)

03 Number of Buildings Within Two (2) Miles of Site

_____

04 Distance to Nearest Off-Site Building

.10 (mi)

05 Population Within Vicinity of Site (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Densely populated residential area to the west but all adjacent areas are commercial/industrial.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

VI. ENVIRONMENTAL INFORMATION

01 Permeability of Unsaturated Zone (Check one)

☐ A. 10^{-6} - 10^{-8} cm/sec ☒ B. 10^{-4} - 10^{-6} cm/sec ☐ C. 10^{-4} - 10^{-3} cm/sec ☐ D. Greater Than 10^{-3} cm/sec

02 Permeability of Bedrock (Check one)

☐ A. Impermeable (Less than 10^{-6} cm/sec) ☐ B. Relatively Impermeable (10^{-4} - 10^{-6} cm/sec) ☐ C. Relatively Permeable (10^{-2} - 10^{-4} cm/sec) ☐ D. Very Permeable (Greater Than 10^{-2} cm/sec)

03 Depth to Bedrock	04 Depth of Contaminated Soil Zone	05 Soil pH
250-300 (ft)	Unknown (ft)	Unknown

06 Net Precipitation	07 One Year 24 Hour Rainfall	08 Slope: Site Slope	Direction of Site Slope	Terrain Average Slope
4-12 mean annual (in)	3.0 (in)	0-2 %	southerly	0-2 %

09 Flood Potential

Site is in N/A Year Floodplan

10 ☐ Site is on Barrier Island, Coastal High Hazard Area, Riverine Floodway

11 Distance to Wetlands (5 acre minimum)

ESTUARINE	OTHER
A. N/A (mi)	B. (mi)

12 Distance to Critical Habitat (of endangered species)

(mi)

Endangered Species: N/A

13 Land Use in Vicinity

Distance to:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. 0 (mi)	B. .10 (mi)	C. (mi)	D. (mi)

14 Description of Site in Relation to Surrounding Topography

Site is relatively flat with a slight overall slope to the south.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site Inspection
LA County Files
EPA Files
On-site observation

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
	357

II. SAMPLES TAKEN

Sample Type	01 Number of Samples Taken	02 Samples Sent To	03 Estimated Date Results Available
Groundwater			
Surface Water		No samples collected	
Waste			
Air			
Runoff			
Spill			
Soil			
Vegetation			
Other			

III. FIELD MEASUREMENTS TAKEN

01 Type	02 Comments
	No field measurements made

IV. PHOTOGRAPHS AND MAPS

01 Type ☐ Ground ☒ Aerial

02 In Custody of Ecology & Environment, Inc., L.A., CA.
(Name of organization or individual)

03 Maps ☒ Yes ☐ No

04 Location of Maps

Files of Ecology & Environment, Inc., Los Angeles, CA.

V. OTHER FIELD DATA COLLECTED (provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site Inspection
LA County Files
EPA Files
On-site observation

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 State: CA	02 Site Number: 357

II. CURRENT OWNER(S)

01 Name	02 D+B Number	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	05 City	06 State	07 Zip Code
Harry Rothschild		12354 Lakeland Road		Sante Fe Springs	CA	90670

PARENT COMPANY (If applicable)

08 Name	09 D+B Number	10 Street Address (P.O. Box, RFD #, etc.)	11 SIC Code	12 City	13 State	14 Zip Code

III. PREVIOUS OWNER(S) (List most recent first)

01 Name	02 D+B Number	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	05 City	06 State	07 Zip Code

IV. REALTY OWNER(S) (If applicable, list most recent first)

01 Name	02 D+B Number	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	05 City	06 State	07 Zip Code

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

II. CURRENT OPERATOR (Provide if different from owner) / OPERATOR'S PARENT COMPANY (If applicable)

01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner) / PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner During This Period				
01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner During This Period				
01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner During This Period				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

II. ON-SITE GENERATOR

01 Name	02 D+B Number
Powerine Oil Company	
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
12354 Lakeland Road	
05 City	06 State / 07 Zip Code
Santa Fe Springs	CA 90670

III. OFF-SITE GENERATOR

01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code
01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code

IV. TRANSPORTER(S)

01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code
01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

II. PAST RESPONSE ACTIVITIES

01 [ ] A. Water Supply Closed — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] B. Temporary Water Supply Provided — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] C. Permanent Water Supply Provided — 02 Date _____ — 03 Agency _____
04 Description

01 [X] D. Spilled Material Removed — 02 Date 1/11/79 & 5/31/83 — 03 Agency _____
04 Description Material cleaned up from Bloomfield Avenue ('83)
Oil cleaned up from Lakeland Road (10 barrels) ('79)

01 [X] E. Contaminated Soil Removed — 02 Date '82 — 03 Agency _____
04 Description Old basin soil removed to BKK landfill and replaced with clean fill.

01 [ ] F. Waste Repackaged — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] G. Waste Disposed Elsewhere — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] H. On Site Burial — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] I. In Situ Chemical Treatment — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] J. In Situ Biological Treatment — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] K. In Situ Physical Trestment — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] L. Encapsulation — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] M. Emergency Waste Treatment — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] N. Cutoff Walls — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] O. Emergency Diking/Surface Water Diversion — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] P. Cutoff Trenches/Sump — 02 Date _____ — 03 Agency _____
04 Description

01 [ ] Q. Subsurface Cutoff Wall — 02 Date _____ — 03 Agency _____
04 Description

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 State	02 Site Number
CA	357

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. Barrier Walls Constructed — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ S. Capping/Covering — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ T. Bulk Tankage Repaired — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ U. Grout Curtain Constructed — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ V. Bottom Sealed — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ W. Gas Control — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ X. Fire Control — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ Y. Leachate Treatment — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ Z. Area Evacuated — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ 1. Access to Site Restricted — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ 2. Population Relocated — 02 Date _____ — 03 Agency _____
04 Description

01 ☐ 3. Other Remedial Activities — 02 Date _____ — 03 Agency _____
04 Description

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
CA	357

II. ENFORCEMENT INFORMATION

01 Past Regulatory/Enforcement Action [X] Yes [ ] No

02 Description of Federal, State, Local Regulatory/Enforcement Action

- o L.A. Sanitation District Violations - See Section 2.4 and Appendix C, Site Inspection Report (SI)
- o Clean-up and Abatement Order (RWQCB Order No. 85-17, 2-28-85) - See SI Report, Section 2.4

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

APPENDIX C

Supporting Documents

Table 1

OFF-SITE DISPOSAL

Years	Disposal Site	Wastes Received
1940's to 1950's	California Salvage Ocean Dumping	Litharge (PbO) and Caustic Sludges
1940's to early 1960's	Norwalk Dump 13780 Imperial Highway La Mirada, CA	Samll amounts of general wastes
1950's to 1960's	Los Nietos Dump Los Nietos Rd. Santa Fe Springs, CA	Small amounts of general wastes
1950's to 1960's	Unknown Off Los Nietos South of Santa Fe RR Near Norwalk Blvd.	Small amounts of general wastes
1950's to 1970's	Puente Hills #6 Pellisiers Dump 2800 Workman Mill Rd. Whittier, CA	Tank bottoms Phosphoric Acid Sludge
1950's to Present	Operating Industries 242 South Garfield Monterey Park, CA	Small amounts of general wastes
1970's to Present	Palos Verdes Dump Crenshaw Rd. Rolling Hills Estates, CA	Small amounts of general wastes

(Reference: EPA, Notification of Hazardous Waste Sites, 1981)

PAST VIOLATIONS AND COMPLIANTS

Los Angeles County Engineers, SCAQMD,
Sanitation District of Los Angeles County

02/16/70	Notice of non-compliance, discharge to sewer - 1.3 ppm hydrogen sulfide
02/17/70	Notice of non-compliance, discharge to sewer - 7.0 ppm hydrogen sulfide
02/18/70	Violation notice, discharge to sewer - 0.5 ppm hydrogen sulfide
02/24/70	Notice of non-compliance, discharge to sewer - 26 ppm hydrogen sulfide
02/25/70	Notice of non-compliance, discharge to sewer - 0.9 ppm hydrogen sulfide
02/27/70	Notice of non-compliance, discharge to sewer - 0.4 ppm hydrogen sulfide
03/02/70	Notice of non-compliance, discharge to sewer - 150.8 ppm hydrogen sulfide
02/15/73	Notice of violation, discontinue oily water to public street
08/15/75	Notice of violation, discharge of excessive concentration of petroleum oil or refined petroleum products
08/18/75	Notice of violation, discharge of excessive concentration of petroleum oil or refined petroleum products
02/20/76	Notice of violation, discharging of wastewater to ground and adjacent property and storm water into sewer
04/20/76	Non-complaince of substance that could cause flammable or explosive conditions
10/19/77	Oil spill at refinery west sump, residual drainage in the Norwalk/Lakeland Road intersection
01/01/78	Non-compliance of substance that could cause flammable or explosive conditions

PAST VIOLATIONS AND COMPLIANTS (Cont.)

Los Angeles County Engineers, SCAQMD,
Sanitation District of Los Angeles County

01/11/79	Oil spill of 10 barrels on Lakeland Road
01/16/81	Non-compliance with wastewater discharge
02/19/81	Non-compliance with wastewater discharge
03/16/81	Issuance of information notice for discharging excessive amounts of oil and grease
04/08/81	Violation of oil and grease and thiosulfate levels
05/06/81	Violation of discharging thiosulfate and oil and grease
12/15/81	Violation of Phase I effluent limits
05/25/82	Discharge of explosive material to sewer
05/26/82	Violation notice (No. 20719) of mercaptan discharge on 5/21/82
05/13/83	Final notice of continued violations of wastewater discharge of toxic materials
05/31/83	Discharge of industrial wastes to ground or street
08/09/83	Violation notice of pH at 1.5
12/01/83	Pressure drop across hydrogenation reactor, probable SO_2 emission violation
12/01/83	Burning dispersion plates of cooling tower, accidental fire
02/01/84	Stock gas and mercaptan odor complaints, H_2S also reddish brown plume
02/09/84	Slurry oil settler valve failure, hot oil leak, Fire Department response and stand-by

STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION

107 SOUTH BROADWAY, SUITE 4027
LOS ANGELES, CALIFORNIA 90012—4596
(213) 620-4460

Lavinger

M-C

May 9, 1989

Mr. Don H. Baker
Powerine Oil Company
P.O. Box 2108
Santa Fe Springs, CA 90670-9883

QUARTERLY GROUND WATER MONITORING AND SAMPLING - POWERINE OIL COMPANY, SANTA FE SPRINGS (FILE 85-18)

We have reviewed your ground water monitoring and sampling report, which summarizes the ground water data gathered during the fourth quarter of 1988. Below are our specific comments:

Elevated levels of volatile organic compounds, particularly, chlorinated compounds, have been detected in your onsite property boundary wells. This finding suggests that the contamination is migrating offsite and you will be required to take immediate action to prevent further offsite migration. In addition, it is necessary to identify any potential source(s) of the chlorinated compounds present in your monitoring wells. Results of the source identification shall be included in the next quarterly report.

In our letter of May 8, 1989, Board staff requested permission from your downgradient property owner, Metropolitan State Hospital (MSH), to allow Powerine Oil Company and the consultant to install offsite monitoring wells on MSH's property. We expect that MSH will respond to this request before June 15, 1989 and you are directed to contact MSH to finalize the well installation agreement as soon as possible.

If you have any questions concerning the above issues, please contact Mr. J. T. Liu at (213) 620-6081.

J. E. ROSS
Senior Water Resource
Control Engineer

JTL/

cc: Allen Young, Metropolitan State Hospital
~~State Department of Health Services, Toxic Substance~~ Control ~~Division, Burbank Office~~

POWERINE Oil Company

12354 Lakeland Road, P.O. Box 2108
Santa Fe Springs, California 90670

(213) 944-9861
(213) 944-6111

TLX No: 4720404
A/B Powerne
Telecopy No: 944-8522

January 14, 1987

J. E. Ross
Senior Water Resource Control Engineer
California Regional Water Quality Control Board
Los Angeles Region
107 South Broadway, Suite 4027
Los Angeles, CA 90012-4596

Re: Fourth Quarter 1987 Groundwater Monitor - Powerine Oil Company

Dear Mr. Ross:

Enclosed please find Powerine Oil Company's fourth quarter monitoring report for groundwater at the Santa Fe Springs refinery.

Please note that we have changed consultants and the work is now being performed by ERT in Irvine. When you are communicating with Powerine regarding this project, address all your correspondence to me and I will distribute appropriate information to our consultants.

The data indicated no significant changes in the groundwater status except that the hydrocarbon on the groundwater in well MW-504 has increased significantly. We will be addressing this situation next quarter.

If you have any questions regarding these matters, please call me.

Sincerely,

Don H. Baker III, esq.
Coordinator - Environmental Affairs

See Expansion Folder

DHB:aj
Enc.

cc: A. L. Gualtieri
W. J. Ziemba
Jocelyn Niebur
Dennis Leonard, Dept. of Health Services

INTERNATIONAL TECHNOLOGY CORPORATION

April 9, 1987

Project No. 240378

Mr. A.L. Gualtieri
Vice President - Manufacturing
Powerine Oil Company
12354 Lakeland Road
Santa Fe Springs, California 90670-9883

Progress Report
Results of Quarterly Ground-Water
Monitoring and Sampling at Powerine Refinery,
Santa Fe Springs, California

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Dear Mr. Gualtieri:

1.0 INTRODUCTION

This report summarizes the results of IT's quarterly ground-water monitoring and sampling at the subject site (Figure 1) in January and February, 1987. Activities included ground-water monitoring, sampling, and laboratory analyses.

2.0 GROUND-WATER MONITORING AND SAMPLING

Fourteen onsite ground-water monitoring wells and three deep water production wells were included in the 1987 first quarter ground-water monitoring program (Figure 2). The ground-water monitoring wells were monitored and sampled between January 22 and 27, 1987. The deep water production wells were sampled on February 9, 1987. The depth to ground water was measured and the presence of free product (gasoline) in the monitoring wells was checked. The collected data are presented in Table 1. Small amounts of free product above the water table were detected in only two monitoring wells, MW-102 and MW-504.

Ground-water sampling from the on-site monitoring wells was performed between January 23, and 27, 1987. In order to minimize the risk of introducing contaminants into the ground water during the sampling program, work proceeded in order from wells with the least contaminated water to wells with increasingly contaminated water. In addition, before monitoring and sampling each well, all equipment used within the well (including

Project No. 240292

FINAL REPORT
MITIGATION INVESTIGATION AND FEASIBILITY STUDY
INCLUDING INTERIM REMEDIAL MEASURES
POWERINE OIL REFINERY
SANTA FE SPRINGS, CALIFORNIA

PREPARED FOR

POWERINE OIL COMPANY
SANTA FE SPRINGS, CALIFORNIA

PREPARED BY

IT Corporation
17461 Derian Avenue
Irvine, California 92714

January 1987

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IT CORPORATION

RESPONSIVE TO THE NEEDS OF ENVIRONMENTAL MANAGEMENT

Project No. 240028-2

WORK PLAN
MITIGATION INVESTIGATION AND FEASIBILITY STUDY FOR GROUND WATER
POWERINE OIL REFINERY
SANTA FE SPRINGS, CALIFORNIA

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4/86

INTERNATIONAL TECHNOLOGY CORPORATION

Project No. 85009
January 1986

Report

Investigation and Site Assessment for Subsurface Contamination

Powerine Oil Refinery
Santa Fe Springs, California

See expansion folder

Powerine Oil Company
Santa Fe Springs, California

RESPONSIVE TO THE NEEDS OF ENVIRONMENTAL MANAGEMENT

REVISED PLAN FOR INVESTIGATION AND SITE ASSESSMENT FOR POTENTIAL SUBSURFACE POLLUTION AT POWERINE OIL COMPANY REFINERY SANTA FE SPRINGS, CALIFORNIA

IT CORPORATION

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Project No. 850009
July, 1985

PROPOSED PLAN FOR INVESTIGATION
AND SITE ASSESSMENT AT
POWERINE OIL COMPANY
SANTA FE SPRINGS REFINERY

The Earth Technology Corporation

PROPOSED PLAN FOR INVESTIGATION AND SITE ASSESSMENT AT POWERINE OIL COMPANY SANTA FE SPRINGS REFINERY

Prepared for:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

Prepared by:

THE EARTH TECHNOLOGY CORPORATION
3777 Long Beach Boulevard
Long Beach, California 90807

May 1985

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